

## SEQUENCE LISTING

<110> Luche, Ralf M.  
Wei, Bo

<120> DSP-12 AND DSP-13 DUAL-SPECIFICITY  
PHOSPHATASES

<130> 200125.420

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<141> 2001-02-01

<160> 33

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 1949

<212> DNA

<213> Homo sapiens

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<210> 2  
 <211> 552  
 <212> PRT  
 <213> Homo sapien

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 Val Ser Val Gln Ala Met Trp Ser Ala Leu Gln Val Leu His Lys Ala  
 35 40 45  
 Cys Glu Val Ala Arg Arg His Asn Tyr Phe Pro Gly Gly Val Ala Leu  
 50 55 60  
 Ile Trp Ala Thr Tyr Tyr Glu Ser Cys Ile Ser Ser Glu Gln Ser Cys  
 65 70 75 80  
 Ile Asn Glu Trp Asn Ala Met Gln Asp Leu Glu Ser Thr Arg Pro Asp  
 85 90 95  
 Ser Pro Ala Leu Phe Val Asp Lys Pro Thr Glu Gly Glu Arg Thr Glu  
 100 105 110  
 Arg Leu Ile Lys Ala Lys Leu Arg Ser Ile Met Met Ser Gln Asp Leu  
 115 120 125  
 Glu Asn Val Thr Ser Lys Glu Ile Arg Asn Glu Leu Glu Lys Gln Met  
 130 135 140  
 Asn Cys Asn Leu Lys Glu Leu Lys Glu Phe Ile Asp Asn Glu Met Leu  
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 Tyr Leu Gly Ser Glu Trp Asn Ala Ser Asn Leu Glu Glu Leu Gln Gly  
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 195 200 205  
 Phe Pro Gly Leu Phe Ala Tyr His Asn Ile Arg Val Tyr Asp Glu Glu  
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 Thr Thr Asp Leu Leu Ala His Trp Asn Glu Ala Tyr His Phe Ile Asn  
 225 230 235 240  
 Lys Ala Lys Arg Asn His Ser Lys Cys Leu Val His Cys Lys Met Gly  
 245 250 255  
 Val Ser Arg Ser Ala Ser Thr Val Ile Ala Tyr Ala Met Lys Glu Phe  
 260 265 270  
 Gly Trp Pro Leu Glu Lys Ala Tyr Asn Tyr Val Lys Gln Lys Arg Ser  
 275 280 285  
 Ile Thr Arg Pro Asn Ala Gly Phe Met Arg Gln Leu Ser Glu Tyr Glu  
 290 295 300  
 Gly Ile Leu Asp Ala Ser Lys Gln Arg His Asn Lys Leu Trp Arg Gln  
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 Gln Thr Asp Ser Ser Leu Gln Gln Pro Val Asp Asp Pro Ala Gly Pro  
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 Gly Asp Phe Leu Pro Glu Thr Pro Asp Gly Thr Pro Glu Ser Gln Leu  
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Pro Phe Leu Asp Asp Ala Ala Gln Pro Gly Leu Gly Pro Pro Leu Pro
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Glu Thr Gly Ser Leu Val His Leu Glu Asp Pro Glu Arg Glu Ala Leu
385      390                      395                      400
Leu Glu Glu Ala Ala Pro Pro Ala Glu Val His Arg Pro Ala Arg Gln
      405                      410                      415
Pro Gln Gln Gly Ser Gly Leu Cys Glu Lys Asp Val Lys Lys Lys Leu
      420                      425                      430
Glu Phe Gly Ser Pro Lys Gly Arg Ser Gly Ser Leu Leu Gln Val Glu
      435                      440                      445
Glu Thr Glu Arg Glu Glu Gly Leu Gly Ala Gly Arg Trp Gly Gln Leu
      450                      455                      460
Pro Thr Gln Leu Asp Gln Asn Leu Leu Asn Ser Glu Asn Leu Asn Asn
465      470                      475                      480
Asn Ser Lys Arg Ser Cys Pro Asn Gly Met Glu Val Gly Arg Ala Arg
      485                      490                      495
Pro Ala Gly Trp His Thr Pro Ser Leu Pro Ser His Ser Asn Trp Pro
      500                      505                      510
Thr Ser Ala Ser Val Val Gly Thr Thr Gly Thr Arg His His Thr Gln
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<210> 3
<211> 21
<212> PRT
<213> Homo sapien

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<400> 3
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<210> 4
<211> 24
<212> PRT
<213> Artificial Sequence

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<220>
<223> Derived from the alignment of nine particular
      human DSPs having MAP-kinase phosphatase activity

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<400> 4
Asn Gly Arg Val Leu Val His Cys Gln Ala Gly Ile Ser Arg Ser Gly
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<210> 5

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<211> 1711  
 <212> DNA  
 <213> Homo sapiens

<400> 5

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caccaagaat	cagccacaga	cgaacaagc	a	atgcaggcga	tctccaacag	catctccaag	360
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<210> 6  
 <211> 509  
 <212> PRT  
 <213> Homo sapiens

<400> 6

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		20					25						30		
Ala	Val	Ile	Ser	Gln	Asn	Ala	Ile	Asn	Gln	Leu	Ile	Ser	Glu	Ser	Phe
		35				40					45				
Leu	Thr	Val	Lys	Gly	Ala	Ala	Leu	Phe	Leu	Pro	Arg	Gly	Asn	Gly	Ser
	50					55				60					
Ser	Thr	Pro	Arg	Ile	Ser	His	Arg	Arg	Asn	Lys	His	Ala	Gly	Asp	Leu
65					70				75					80	
Gln	Gln	His	Leu	Gln	Ala	Met	Phe	Ile	Leu	Leu	Arg	Pro	Glu	Asp	Asn
			85					90					95		
Ile	Arg	Leu	Ala	Val	Arg	Leu	Glu	Ser	Thr	Tyr	Gln	Asn	Arg	Thr	Arg

			100					105				110			
Tyr	Met	Val	Val	Val	Ser	Thr	Asn	Gly	Arg	Gln	Asp	Thr	Glu	Glu	Ser
		115					120					125			
Ile	Val	Leu	Gly	Met	Asp	Phe	Ser	Ser	Asn	Asp	Ser	Ser	Thr	Cys	Thr
	130					135					140				
Met	Gly	Leu	Val	Leu	Pro	Leu	Trp	Ser	Asp	Thr	Leu	Ile	His	Leu	Asp
145					150				155						160
Gly	Asp	Gly	Gly	Phe	Ser	Val	Ser	Thr	Asp	Asn	Arg	Val	His	Ile	Phe
				165					170					175	
Lys	Pro	Val	Ser	Val	Gln	Ala	Met	Trp	Ser	Ala	Leu	Gln	Ser	Leu	His
		180						185					190		
Lys	Ala	Cys	Glu	Val	Ala	Arg	Ala	His	Asn	Tyr	Tyr	Pro	Gly	Ser	Leu
	195						200					205			
Phe	Leu	Thr	Trp	Val	Ser	Tyr	Tyr	Glu	Ser	His	Ile	Asn	Ser	Asp	Gln
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Ser	Ser	Val	Asn	Glu	Trp	Asn	Ala	Met	Gln	Asp	Val	Gln	Ser	His	Arg
225					230					235					240
Pro	Asp	Ser	Pro	Ala	Leu	Phe	Thr	Asp	Ile	Pro	Thr	Glu	Arg	Glu	Arg
				245					250					255	
Thr	Glu	Arg	Leu	Ile	Lys	Thr	Lys	Leu	Arg	Glu	Ile	Met	Met	Gln	Lys
			260					265					270		
Asp	Leu	Glu	Asn	Ile	Thr	Ser	Lys	Glu	Ile	Arg	Thr	Glu	Leu	Glu	Met
	275					280					285				
Gln	Met	Val	Cys	Asn	Leu	Arg	Glu	Phe	Lys	Glu	Phe	Ile	Asp	Asn	Glu
	290				295						300				
Met	Ile	Val	Ile	Leu	Gly	Gln	Met	Asp	Ser	Pro	Thr	Gln	Ile	Phe	Glu
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His	Val	Phe	Leu	Gly	Ser	Glu	Trp	Asn	Ala	Ser	Asn	Leu	Glu	Asp	Leu
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Gln	Asn	Arg	Gly	Val	Arg	Tyr	Ile	Leu	Asn	Val	Thr	Arg	Glu	Ile	Asp
			340					345					350		
Asn	Phe	Phe	Pro	Gly	Val	Phe	Glu	Tyr	His	Asn	Ile	Arg	Val	Tyr	Asp
	355					360						365			
Glu	Glu	Ala	Thr	Asp	Leu	Leu	Ala	Tyr	Trp	Asn	Asp	Thr	Tyr	Lys	Phe
	370					375					380				
Ile	Ser	Lys	Ala	Lys	Lys	His	Gly	Ser	Lys	Cys	Leu	Val	His	Cys	Lys
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Met	Gly	Val	Ser	Arg	Ser	Ala	Ser	Thr	Val	Ile	Ala	Tyr	Ala	Met	Lys
				405					410					415	
Glu	Tyr	Gly	Trp	Asn	Leu	Asp	Arg	Ala	Tyr	Asp	Tyr	Val	Lys	Glu	Arg
			420					425					430		
Arg	Thr	Val	Thr	Lys	Pro	Asn	Pro	Ser	Phe	Met	Arg	Gln	Leu	Glu	Glu
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	450					455					460				
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465					470					475					480
Leu	Val	Ser	Ile	Pro	Gly	Ser	Pro	Ser	Cys	Cys	Asn	Pro	Glu	Lys	Leu
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&lt;211&gt; 1052

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 7

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&lt;210&gt; 8

&lt;211&gt; 241

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 8

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Glu	Leu	Glu	Met	Gln	Met	Val	Cys	Asn	Leu	Arg	Glu	Phe	Lys	Glu	Phe
			20					25					30		
Ile	Asp	Asn	Glu	Met	Ile	Val	Ile	Leu	Gly	Gln	Met	Asp	Ser	Pro	Thr
		35					40				45				
Gln	Ile	Phe	Glu	His	Val	Phe	Leu	Gly	Ser	Glu	Trp	Asn	Ala	Ser	Asn
	50					55				60					
Leu	Glu	Asp	Leu	Gln	Asn	Arg	Gly	Val	Arg	Tyr	Ile	Leu	Asn	Val	Thr
65				70					75					80	
Arg	Glu	Ile	Asp	Asn	Phe	Phe	Pro	Gly	Val	Phe	Glu	Tyr	His	Asn	Ile
			85					90					95		
Arg	Val	Tyr	Asp	Glu	Glu	Ala	Thr	Asp	Leu	Leu	Ala	Tyr	Trp	Asn	Asp
		100						105				110			
Thr	Tyr	Lys	Phe	Ile	Ser	Lys	Ala	Lys	Lys	His	Gly	Ser	Lys	Cys	Leu
	115					120						125			
Val	His	Cys	Lys	Met	Gly	Val	Ser	Arg	Ser	Ala	Ser	Thr	Val	Ile	Ala
	130				135						140				
Tyr	Ala	Met	Lys	Glu	Tyr	Gly	Trp	Asn	Leu	Asp	Arg	Ala	Tyr	Asp	Tyr
145				150				155						160	
Val	Lys	Glu	Arg	Arg	Thr	Val	Thr	Lys	Pro	Asn	Pro	Ser	Phe	Met	Arg
			165					170					175		
Gln	Leu	Glu	Glu	Tyr	Gln	Gly	Ile	Leu	Leu	Ala	Ser	Phe	Leu	Gly	Leu
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Ile	His	Gly	Gly	Arg	Asp	Lys	Pro	Trp	Gly	Glu	Lys	Ser	Thr	Glu	Phe

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<210> 13
<211> 27
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<212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Primer

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<210> 14  
 <211> 27  
 <212> DNA  
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<220>  
 <223> Primer

<400> 14  
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<210> 15  
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<210> 18



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<400> 18  
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 Leu Tyr Leu Gly Cys Ala Lys Asp Ser Thr Asn Leu Asp Val Leu Glu  
 35 40 45  
 Glu Phe Gly Ile Lys Tyr Ile Leu Asn Val Thr Pro Asn Leu Pro Asn  
 50 55 60  
 Leu Phe Glu Asn Ala Gly Glu Phe Lys Tyr Lys Gln Ile Pro Ile Ser  
 65 70 75 80  
 Asp His Trp Ser Gln Asn Leu Ser Gln Phe Phe Pro Glu Ala Ile Ser  
 85 90 95  
 Phe Ile Asp Glu Ala Arg Gly Lys Asn Cys Gly Val Leu Val His Cys  
 100 105 110  
 Leu Ala Gly Ile Ser Arg Ser Val Thr Val Thr Val Ala Tyr Leu Met  
 115 120 125  
 Gln Lys Leu Asn Leu Ser Met Asn Asp Ala Tyr Asp Ile Val Lys Met  
 130 135 140  
 Lys Lys Ser Asn Ile Ser Pro Asn Phe Asn Phe Met Gly Gln Leu Leu  
 145 150 155 160  
 Asp Phe Glu Arg Thr Leu Gly Leu Ser Ser  
 165 170

<210> 24  
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 <212> PRT  
 <213> Homo sapiens

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 Pro Ser Ser Gln Pro Ala Phe Pro Val Gln Ile Leu Pro Tyr Leu Tyr  
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 Leu Gly Cys Ala Lys Asp Ser Thr Asn Leu Asp Val Leu Gly Lys Tyr  
 35 40 45  
 Gly Ile Lys Tyr Ile Leu Asn Val Thr Pro Asn Leu Pro Asn Ala Phe  
 50 55 60  
 Glu His Gly Gly Glu Phe Thr Tyr Lys Gln Ile Pro Ile Ser Asp His  
 65 70 75 80  
 Trp Ser Gln Asn Leu Ser Gln Phe Phe Pro Glu Ala Ile Ser Phe Ile  
 85 90 95  
 Asp Glu Ala Arg Ser Lys Lys Cys Gly Val Leu Val His Cys Leu Ala  
 100 105 110  
 Gly Ile Ser Arg Ser Val Thr Val Thr Val Ala Tyr Leu Met Gln Lys  
 115 120 125  
 Met Asn Leu Ser Leu Asn Asp Ala Tyr Asp Phe Val Lys Arg Lys Lys  
 130 135 140  
 Ser Asn Ile Ser Pro Asn Phe Asn Phe Met Gly Gln Leu Leu Asp Phe

145                      150                      155                      160  
 Glu Arg Thr Leu Gly Leu Ser Ser  
                          165

<210> 25  
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 <212> PRT  
 <213> Homo sapiens

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 Ile Leu Pro Asn Leu Tyr Leu Gly Ser Ala Arg Asp Ser Ala Asn Leu  
                          20                      25                      30  
 Glu Ser Leu Ala Lys Leu Gly Ile Arg Tyr Ile Leu Asn Val Thr Pro  
                          35                      40                      45  
 Asn Leu Pro Asn Phe Phe Glu Lys Asn Gly Asp Phe His Tyr Lys Gln  
                          50                      55                      60  
 Ile Pro Ile Ser Asp His Trp Ser Gln Asn Leu Ser Arg Phe Phe Pro  
 65                      70                      75                      80  
 Glu Ala Ile Glu Phe Ile Asp Glu Ala Leu Ser Gln Asn Cys Gly Val  
                          85                      90                      95  
 Leu Val His Cys Leu Ala Gly Val Ser Arg Ser Val Thr Val Thr Val  
                          100                      105                      110  
 Ala Tyr Leu Met Gln Lys Leu His Leu Ser Leu Asn Asp Ala Tyr Asp  
                          115                      120                      125  
 Leu Val Lys Arg Lys Lys Ser Asn Ile Ser Pro Asn Phe Asn Phe Met  
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 Gly Gln Leu Leu Asp Phe Glu Arg Ser Leu Arg Leu Glu  
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<210> 26  
 <211> 170  
 <212> PRT  
 <213> Homo sapiens

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 Gln Pro Cys Leu Pro Val Pro Ser Val Gly Leu Thr Arg Ile Leu Pro  
                          20                      25                      30  
 His Leu Tyr Leu Gly Ser Gln Lys Asp Val Leu Asn Lys Asp Leu Met  
                          35                      40                      45  
 Thr Gln Asn Gly Ile Ser Tyr Val Leu Asn Ala Ser Asn Ser Cys Pro  
                          50                      55                      60  
 Lys Pro Asp Phe Ile Cys Glu Ser Arg Phe Met Arg Val Pro Ile Asn  
 65                      70                      75                      80  
 Asp Asn Tyr Cys Glu Lys Leu Leu Pro Trp Leu Asp Lys Ser Ile Glu  
                          85                      90                      95  
 Phe Ile Asp Lys Ala Lys Leu Ser Ser Cys Gln Val Ile Val His Cys  
                          100                      105                      110  
 Leu Ala Gly Ile Ser Arg Ser Ala Thr Ile Ala Ile Ala Tyr Ile Met  
                          115                      120                      125  
 Lys Thr Met Gly Met Ser Ser Asp Asp Ala Tyr Arg Phe Val Lys Asp

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Arg	Arg	Pro	Ser	Ile	Ser
145		150		155	
Glu	Tyr	Glu	Arg	Thr	Leu
		165		170	

<210> 27  
 <211> 168  
 <212> PRT  
 <213> Homo sapiens

<400> 27

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Pro	Arg	Val	Pro	Ile	Tyr	Asp	Gln	Gly	Gly	Pro	Val	Glu	Ile	Leu	Pro
			20					25					30		
Tyr	Leu	Tyr	Leu	Gly	Ser	Cys	Asn	His	Ser	Ser	Asp	Leu	Gln	Gly	Leu
		35					40					45			
Gln	Ala	Cys	Gly	Ile	Thr	Ala	Val	Leu	Asn	Val	Ser	Ala	Ser	Cys	Pro
	50					55				60					
Asn	His	Phe	Glu	Gly	Leu	Phe	His	Tyr	Lys	Ser	Ile	Pro	Val	Glu	Asp
65					70					75				80	
Asn	Gln	Met	Val	Glu	Ile	Ser	Ala	Trp	Phe	Gln	Glu	Ala	Ile	Ser	Phe
			85						90					95	
Ile	Asp	Ser	Val	Lys	Asn	Ser	Gly	Gly	Arg	Val	Leu	Val	His	Cys	Gln
			100					105					110		
Ala	Gly	Ile	Ser	Arg	Ser	Ala	Thr	Ile	Cys	Leu	Ala	Tyr	Leu	Ile	Gln
		115					120					125			
Ser	His	Arg	Val	Arg	Leu	Asp	Glu	Ala	Phe	Asp	Phe	Val	Lys	Gln	Arg
	130					135					140				
Arg	Gly	Val	Ile	Ser	Pro	Asn	Phe	Ser	Phe	Met	Gly	Gln	Leu	Leu	Gln
145					150					155					160
Leu	Glu	Thr	Gln	Val	Leu	Cys	His								
				165											

<210> 28  
 <211> 169  
 <212> PRT  
 <213> Homo sapiens

<400> 28

Pro	Leu	Ser	Thr	Ser	Val	Pro	Asp	Ser	Ala	Glu	Ser	Gly	Cys	Ser	Ser
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Cys	Ser	Thr	Pro	Leu	Tyr	Asp	Gln	Gly	Gly	Pro	Val	Glu	Ile	Leu	Pro
			20					25					30		
Phe	Leu	Tyr	Leu	Gly	Ser	Ala	Tyr	His	Ala	Ser	Arg	Lys	Asp	Met	Leu
		35					40					45			
Asp	Ala	Leu	Gly	Ile	Thr	Ala	Leu	Ile	Asn	Val	Ser	Ala	Asn	Cys	Pro
	50					55				60					
Asn	His	Phe	Glu	Gly	His	Tyr	Gln	Tyr	Lys	Ser	Ile	Pro	Val	Glu	Asp
65					70					75				80	
Asn	His	Lys	Ala	Asp	Ile	Ser	Ser	Trp	Phe	Asn	Glu	Ala	Ile	Asp	Phe
			85						90					95	
Ile	Asp	Ser	Ile	Lys	Asn	Ala	Gly	Gly	Arg	Val	Phe	Val	His	Cys	Gln

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          100                      105                      110
Ala Gly Ile Ser Arg Ser Ala Thr Ile Cys Leu Ala Tyr Leu Met Arg
      115                      120                      125
Thr Asn Arg Val Lys Leu Asp Glu Ala Phe Glu Phe Val Lys Gln Arg
      130                      135                      140
Arg Ser Ile Ile Ser Pro Asn Phe Ser Phe Met Gly Gln Leu Leu Gln
145                      150                      155                      160
Phe Glu Ser Gln Val Leu Ala Pro His
          165

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<210> 29  
 <211> 169  
 <212> PRT  
 <213> Homo sapiens

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Cys Gly Thr Pro Leu His Asp Gln Gly Gly Pro Val Glu Ile Leu Pro
      20          25          30
Phe Leu Tyr Leu Gly Ser Ala Tyr His Ala Ala Arg Arg Asp Met Leu
      35          40          45
Asp Ala Leu Gly Ile Thr Ala Leu Leu Asn Val Ser Ser Asp Cys Pro
      50          55          60
Asn His Phe Glu Gly His Tyr Gln Tyr Lys Cys Ile Pro Val Glu Asp
65          70          75          80
Asn His Lys Ala Asp Ile Ser Ser Trp Phe Met Glu Ala Ile Glu Tyr
      85          90          95
Ile Asp Ala Val Lys Asp Cys Arg Gly Arg Val Leu Val His Cys Gln
      100          105          110
Ala Gly Ile Ser Arg Ser Ala Thr Ile Cys Leu Ala Tyr Leu Met Met
      115          120          125
Lys Lys Arg Val Arg Leu Glu Glu Ala Phe Glu Phe Val Lys Gln Arg
      130          135          140
Arg Ser Ile Ile Ser Pro Asn Phe Ser Phe Met Gly Gln Leu Leu Gln
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Phe Glu Ser Gln Val Leu Ala Thr Ser
          165

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<210> 30  
 <211> 171  
 <212> PRT  
 <213> Homo sapiens

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Ser Glu Arg Ala Leu Ile Ser Gln Cys Gly Lys Pro Val Val Asn Val
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Ser Tyr Arg Pro Ala Tyr Asp Gln Gly Gly Pro Val Glu Ile Leu Pro
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Phe Leu Tyr Leu Gly Ser Ala Tyr His Ala Ser Lys Cys Glu Phe Leu
      35          40          45
Ala Asn Leu His Ile Thr Ala Leu Leu Asn Val Ser Arg Arg Thr Ser
      50          55          60
Glu Ala Cys Met Thr His Leu His Tyr Lys Trp Ile Pro Val Glu Asp

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65              70              75              80
Ser His Thr Ala Asp Ile Ser Ser His Phe Gln Glu Ala Ile Asp Phe
                        85              90              95
Ile Asp Cys Val Arg Glu Lys Gly Gly Lys Val Leu Val His Cys Glu
                        100             105             110
Ala Gly Ile Ser Arg Ser Pro Thr Ile Cys Met Ala Tyr Leu Met Lys
                        115             120             125
Thr Lys Gln Phe Arg Leu Lys Glu Ala Phe Asp Tyr Ile Lys Gln Arg
                        130             135             140
Arg Ser Met Val Ser Pro Asn Phe Gly Phe Met Gly Gln Leu Leu Gln
145              150              155              160
Tyr Glu Ser Glu Ile Leu Pro Ser Thr Pro Asn
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<210> 31
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<212> PRT
<213> Homo sapiens

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Met Leu Leu Ile Leu Gly Gln Met Asp Lys Pro Ser Leu Ile Phe Asp
                20              25              30
His Leu Tyr Leu Gly Ser Glu Trp Asn Ala Ser Asn Leu Glu Glu Leu
                35              40              45
Gln Gly Ser Gly Val Asp Tyr Ile Leu Asn Val Thr Arg Glu Ile Asp
50              55              60
Asn Phe Phe Pro Gly Leu Phe Ala Tyr His Asn Ile Arg Val Tyr Asp
65              70              75              80
Glu Glu Thr Thr Asp Leu Leu Ala His Trp Asn Glu Ala Tyr His Phe
                        85              90              95
Ile Asn Lys Ala Lys Arg Asn His Ser Lys Cys Leu Val His Cys Lys
                        100             105             110
Met Gly Val Ser Arg Ser Ala Ser Thr Val Ile Ala Tyr Ala Met Lys
                        115             120             125
Glu Phe Gly Trp Pro Leu Glu Lys Ala Tyr Asn Tyr Val Lys Gln Lys
130              135              140
Arg Ser Ile Thr Arg Pro Asn Ala Gly Phe Met Arg Gln Leu Ser Glu
145              150              155              160
Tyr Glu Gly Ile Leu Asp Ala Ser Lys Gln
                        165             170

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<210> 32
<211> 170
<212> PRT
<213> Homo sapiens

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<400> 32
Gln Met Val Cys Asn Leu Arg Glu Phe Lys Glu Phe Ile Asp Asn Glu
 1              5              10              15
Met Ile Val Ile Leu Gly Gln Met Asp Ser Pro Thr Gln Ile Phe Glu
                20              25              30
His Val Phe Leu Gly Ser Glu Trp Asn Ala Ser Asn Leu Glu Asp Leu

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<210> 33
<211> 180
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[illegible]

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02/05/01 A Box/SEP

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PTO/SB/05 (11-00)

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<b>UTILITY PATENT APPLICATION TRANSMITTAL</b> <i>(Only for new nonprovisional applications under 37 CFR 1.53(b))</i>	Attorney Docket No.	200125.420
	First Inventor	Ralf M. Luche
	Title	DSP-12 AND DSP-13 DUAL-SPECIFICITY PHOSPHATASES
	Express Mail Label No.	EL773171053US


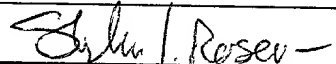
1. <input type="checkbox"/> Fee Transmittal Form (e.g., PTO/SB/17) <i>(Submit an original and a duplicate for fee processing)</i>	7. <input type="checkbox"/> CD-ROM or CD-R in duplicate, large table or Computer Program <i>(Appendix)</i>	
2. <input checked="" type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27.	8. <input checked="" type="checkbox"/> Nucleotide and/or Amino Acid Sequence Submission <i>(if applicable, all necessary)</i>	
3. <input checked="" type="checkbox"/> Specification [Total Pages 56] <i>(preferred arrangement set forth below)</i> - Descriptive title of the Invention - Cross Reference to Related Applications - Statement Regarding Fed sponsored R & D - Reference to sequence listing, a table, or a computer program listing appendix - Background of the Invention - Brief Summary of the Invention - Brief Description of the Drawings <i>(if filed)</i> - Detailed Description - Claim(s) - Abstract of the Disclosure	a. <input checked="" type="checkbox"/> Computer Readable Form (CRF) b. <input checked="" type="checkbox"/> Specification Sequence Listing on: i. <input type="checkbox"/> CD-ROM or CD-R (2 copies); or ii. <input checked="" type="checkbox"/> paper c. <input checked="" type="checkbox"/> Statements verifying identity of above copies	
4. <input checked="" type="checkbox"/> Drawing(s) (35 U.S.C. 113) [Total Sheets 7]	<b>ACCOMPANYING APPLICATION PARTS</b>	
5. <input checked="" type="checkbox"/> Oath or Declaration [Total Sheets ] a. <input type="checkbox"/> Newly executed (original or copy) b. <input type="checkbox"/> Copy from a prior application (37 CFR 1.63 (d)) <i>(for a continuation/divisional with Box 18 completed)</i> i. <input type="checkbox"/> <b>DELETION OF INVENTOR(S)</b> Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).	9. <input type="checkbox"/> Assignment Papers (cover sheet & document(s))	
6. <input type="checkbox"/> Application Data Sheet. See 37 CFR 1.76	10. <input type="checkbox"/> 37 CFR 3.73(b) Statement <input type="checkbox"/> Power of <i>(when there is an assignee)</i> Attorney	
	11. <input type="checkbox"/> English Translation Document <i>(if applicable)</i>	
	12. <input type="checkbox"/> Information Disclosure <input type="checkbox"/> Copies of IDS Statement (IDS)/PTO-1449 Citations	
	13. <input type="checkbox"/> Preliminary Amendment	
	14. <input checked="" type="checkbox"/> Return Receipt Postcard (MPEP 503) <i>Should be specifically itemized)</i>	
	15. <input type="checkbox"/> Certified Copy of Priority Document(s) <i>(if foreign priority is claimed)</i>	
	16. <input type="checkbox"/> Request and Certification under 35 U.S.C. Applicant must attach form 122(b)(2)(B)(i). PTO/SB/35 or its equivalent.	
	17. <input checked="" type="checkbox"/> Other: <u>Certificate of Mailing by Express Mail</u>	

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment, or in an Application Data Sheet under 37 CFR 1.76

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) ☐ of prior application No. \_\_\_\_\_ / \_\_\_\_\_

Prior application information Examiner \_\_\_\_\_ Group Art Unit: \_\_\_\_\_

For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

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<input type="checkbox"/> Correspondence address below or:			<input checked="" type="checkbox"/> Customer Number or Bar Code Label
Firm Name	Seed Intellectual Property Law Group PLLC		 00500 PATENT TRADEMARK OFFICE
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Telephone	(206) 622-4900	Fax (206) 682-6031	
Name (Print/Type)	Stephen J. Rosenman, Ph.D.	Registration No. (Attorney/Agent)	43,058
Signature			Date 2/1/01

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